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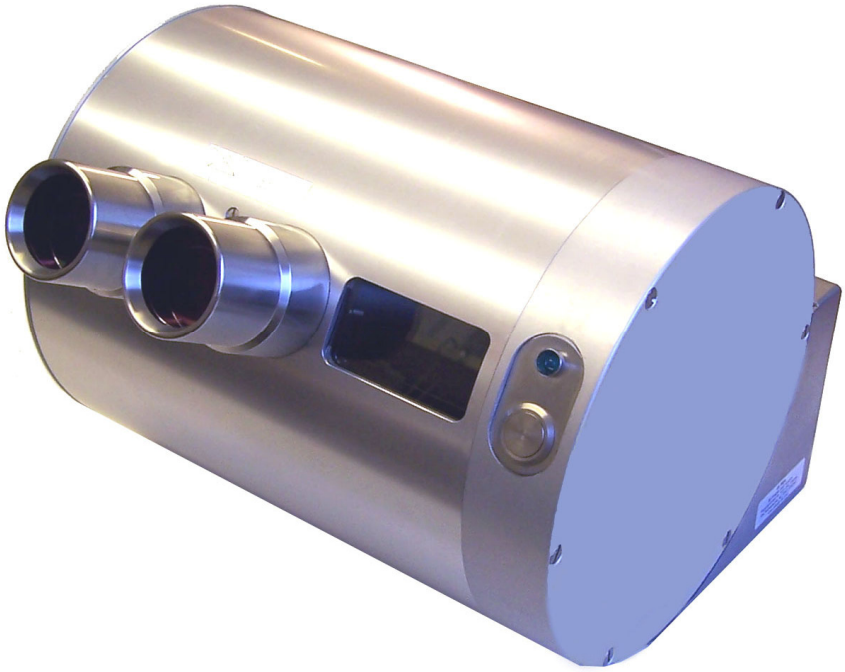
User manual of the 10 slide rotary viewer model 2007-b motor advance mechanism



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Introduction

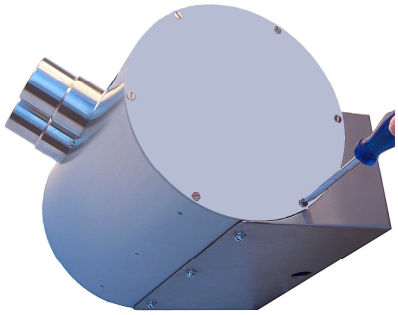
This viewer is the result 30 years of experience in building high quality 3D slide viewers for public use. Each change in the previous models extended the durability, stability and the quality. Especially this 10-slide rotary viewer 2007 has been adapted for the demand to show short 3D slide series to large amounts of public to be informed. To give any idea about the changes with respect to the previous model:

- The position of the interior with respect to the focus of the lenses is not adjustable anymore, the left side cover is now flat without screws.
- The CCFL has been replaced for a LED backlight panel which prevents the slides for colour decade by UV

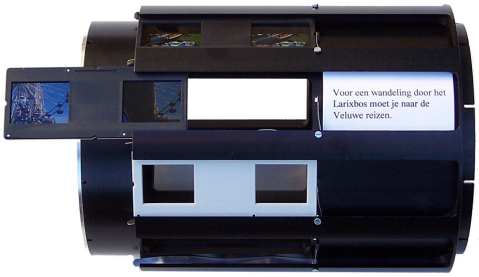
1. First indications for operational use

1.1 Opening the viewer for exchanging the slides.

- For exchanging the slides you have to remove the right cover of the round housing; see the image. That is the side where the text window and the pushbutton are located.
- Remove the 6 bolts.
- Remove the DC adapter plug from the rear side of the drum.
- Now pull gently the right cover away of the main drum and place the whole thing right up on a table.
- Now you can insert or exchange your slides and text cards. Keep the order and position of the slides in mind that they won't be presented up side down!



Picture 1



Picture 2

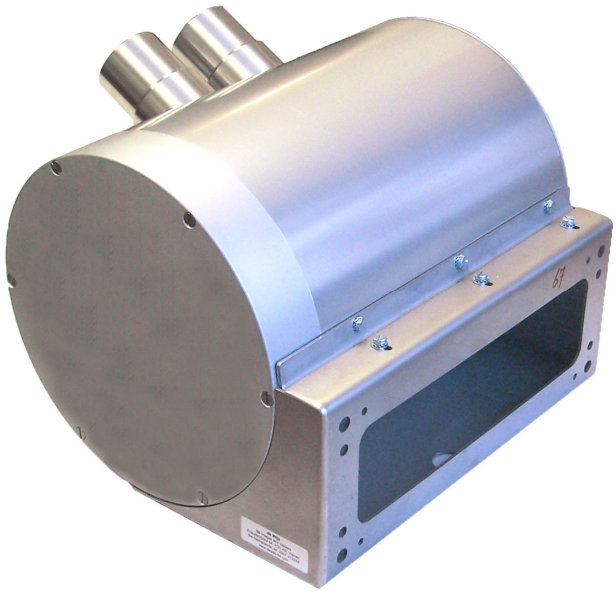
1.2 Were do I place the viewer?

Obviously you already have chosen a spot for the viewer in your museum, exhibition or other public environment. Here are some considerations that might help you to check the spot;

- Keep in mind the height of the viewer. Children and grown-ups both want to look in the viewer!
- Depending on the interest of the viewer, people might form a queue. This could cause congestion for the rest of the public.
- Watch out for sunlight coming through the lenses! The lenses will act like burn glasses on the slides. A few minutes in the sun will cause enough damage to the slide that it should be replaced. Within 1 day, in worst case, you have to replace all slides. You can see this on the slide like tiny little white spots showing the track of the sun during the day.
- Avoid spotlights to be shinning on the lenses. The slides are not going to be burned but it does shorten the lifecycle of the slide.
- When the viewer is to be mounted inside some kind of panel, be sure you can get easy access to the viewer for replacing the slides.

1.3 How do I mount the viewer against a wall?

The 10 slide rotary viewer holds a bracket at the back that has several holes to attach the viewer with screws or bolts against a wall. First you have to remove the 3 bolts on the top of the bracket (see the image) and the bolts underneath the viewer to position the bracket only against the wall. Think about how you want to let the cables run through the bracket; are they going through the wall or do they go through the hole at the bottom of the bracket?



Picture 3

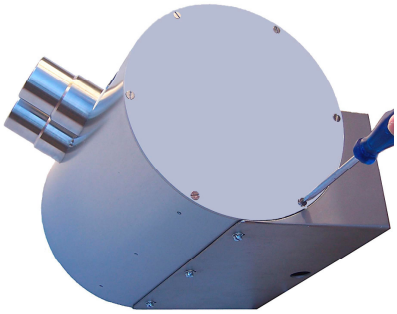
2. Manual operation (without PC control)

In this situation, the rotary viewer is used in stand-alone mode, without any external devices.

2.1 Four operational modes:

The rotary viewer is able to work in 4 different modes. These modes are configurable using the small switches inside the viewer. To get access to these switches follow the next directions:

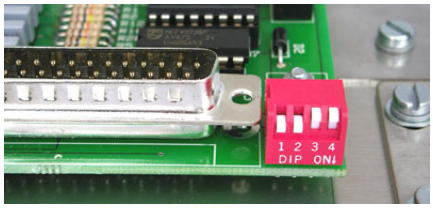
- Removing the 6 bolts of the right cover of the viewer (the side where button is located, picture 4).



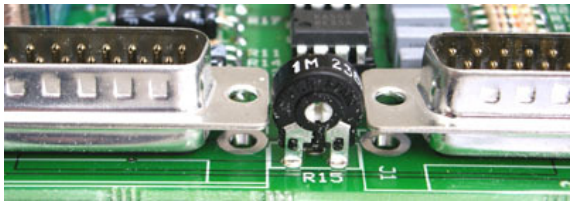
Picture 4

Picture 5

- Now you see the round slide drum. Through the bars of the slide drum, you see the red dipswitches (picture 6)

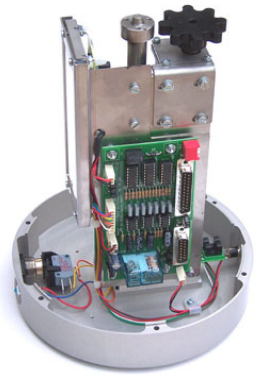


Picture 6



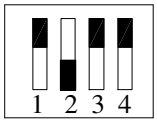
Picture 7

To change the turn off time of the lamp, you have to remove the slide drum by taking the 3 bolts on top of the drum away. Be careful with removing and replacing the drum. You can damage some electronic parts. Now the time is set to ± 40 seconds. Turning with a screwdriver the pot-meter counter clockwise, will increase the time, turning anticlockwise will decrease it.

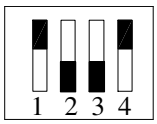


At the right you see an illustration of the dipswitch.
The black square marks the position of the switch.

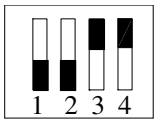
Mode 1:
After the pre-set shut-off time, the lamp turns off and the viewer stays at this slide.



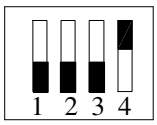
Mode 2:
After the pre-set shut-off time, the lamp turns off and the drum revolves to slide number 1.



Mode 3:
The lamp is always on, after the shut-off time the viewer stays at the current slide.



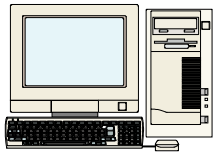
Mode 4:
The lamp is always on, after the shut-off time the drum revolves to slide number 1.



- You can adjust the shut-off time of the lamp by turning with a screwdriver the knob beside the small switches inside the viewer. Turning counter clockwise will increase the time, turning anticlockwise will decrease it.

4. External control (with PC)

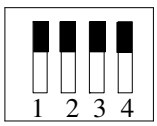
In this situation, the rotary viewer is able to operate according to a configured program with audible explanation of the slide. An IBM compatible PC is required to work with the accompanied software of the rotary viewer to control the rotary viewer.



4.1 Setting up the equipment and cable connections

List of materials:
- 10 slide Rotary viewer of ‘de Wijs’ model 2007
- One 12 Volts dc adapter for the rotary viewer.
- Language panel (if you need it).
- 1 Euro connector power cables for the computer
- 1 parallel extension cable with a male D25 and female D25 plug.
- An IBM compatible x86 computer with at least 1 free parallel printer port connector and CD-ROM player, complete it with the usual keyboard, monitor, etc. (mouse not necessary)
- 3.5” Boot disk for the rotary viewer.
- An audio cable with 2,5 mm stereo jack to double cinch or headphones.

Connect all cables according to the connection diagram (chapter 6.2).
Set the small switches at the back of the rotary viewer according to the picture on the right.



For more information about the how to configure the computer and to make audio tracks, take a look at the software manual that can be downloaded at www.dewijs-3d.com at the technical support download page.

6 Data

6.1 Technical specifications of the rotary viewer

Slides:

- Slide frame format; 41x101 mm.
- Maximum picture size; 23x33 mm.
- Compatible with RBT frames, mounted between glass maximum 3 mm. Thickness.
- The drum can hold 10 slides and accompanying text cards.

Optics:

- One lens barrel holds 2 achromatic lenses of ∅ 37 mm. f= 120 mm. each.
- Total focal distance is 60 mm.; magnification: 4.2 x
- Lenses are coated on all sides
- Lens separation is fixed to 62 mm.

Illumination:

- The slide is illuminated by a LED backlight.
- The colour temperature is 5500 Kelvin.
- The lamp runs on 12 Volts dc at ± 30mA.

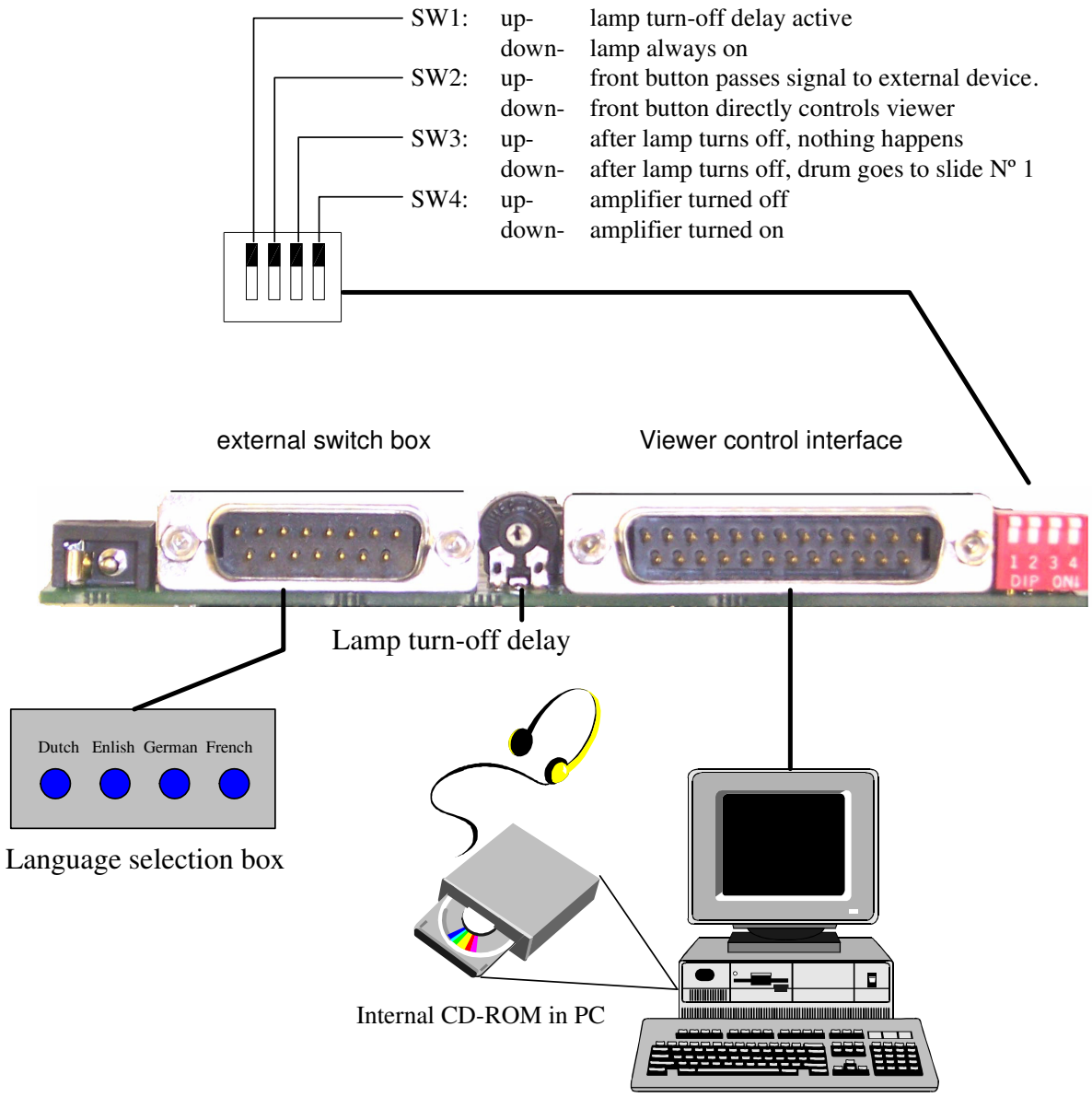
Mechanics;

- The Housing of the viewer is made of plain anodised aluminium. The wall bracket and lens barrels are made of stainless steel.
- The slide drum revolves on ball bearings and don't need any lubrication.
- A 12 Volts motor using a cock wheel mechanism revolves the drum.
- When removing the steel plate at the left side of the viewer (4 bolts), you get access to four M4 bolts. These bolts make it possible to adjust the focus of the slide drum with regards to the fixed lenses. Do NOT un-fasten these bolts, the focus has been adjusted in the factory very carefully!

Electronics;

- The whole viewer runs internally on 12 Volts dc. The viewer comes with a 220 Volts AC adapter giving **15 Volts ac. at 500mA**.
- The internal circuitry is fused with an 1 Amp. fuse.

6.2 External connection diagram


SW1: up- lamp turn-off delay active
down- lamp always on
SW2: up- front button passes signal to external device.
down- front button directly controls viewer
SW3: up- after lamp turns off, nothing happens
down- after lamp turns off, drum goes to slide Nº 1
SW4: up- amplifier turned off
down- amplifier turned on
external switch box
Viewer control interface
1 2 3 4
DIP ON
Lamp turn-off delay
Dutch Enlish German French
Language selection box
Internal CD-ROM in PC

6.3 Connections of the D25 and J3 connector.

D25 connector:

Connector pin	Description computer side and addressing		Description rotary viewer side	Direction looking from computer side.
1	Strobe	Base+2 bit 0	Not used	Output
2	D0	Base+0 bit 0	Change slide, 1= moving	Output
3	D1	Base+0 bit 1	Lamp, 1=lamp on.	Output
4	D2	Base+0 bit 2	Not used	Output
5	D3	Base+0 bit 3	Not used	Output
6	D4	Base+0 bit 4	Loop through to D15 con.	Output
7	D5	Base+0 bit 5	Loop through to D15 con.	Output
8	D6	Base+0 bit 6	Loop through to D15 con.	Output
9	D7	Base+0 bit 7	Loop through to D15 con.	Output
10	Acknowledge	Base+1 bit 6	Button front panel, 1=pressed	Input
11	Busy	Base+1 bit 7	Loop through to D15 con.	Output
12	Paper end	Base+1 bit 5	Light gate ‘zero’ detection.	Input
13	Select out	Base+1 bit 4	Light gate ‘stop’ detection.	Input
14	Auto feed	Base+2 bit 1	Not used	Output
15	Error	Base+1 bit 3	Loop through to D15 con.	Input
16	Init	Base+2 bit 2	Not used	Output
17	Select in	Base+2 bit 3	Not used	Output
18	Gnd			
19	Gnd			
20	Gnd			
21	Gnd			
22	Gnd			
23	Gnd			
24	Gnd			
25	Chassis ground			

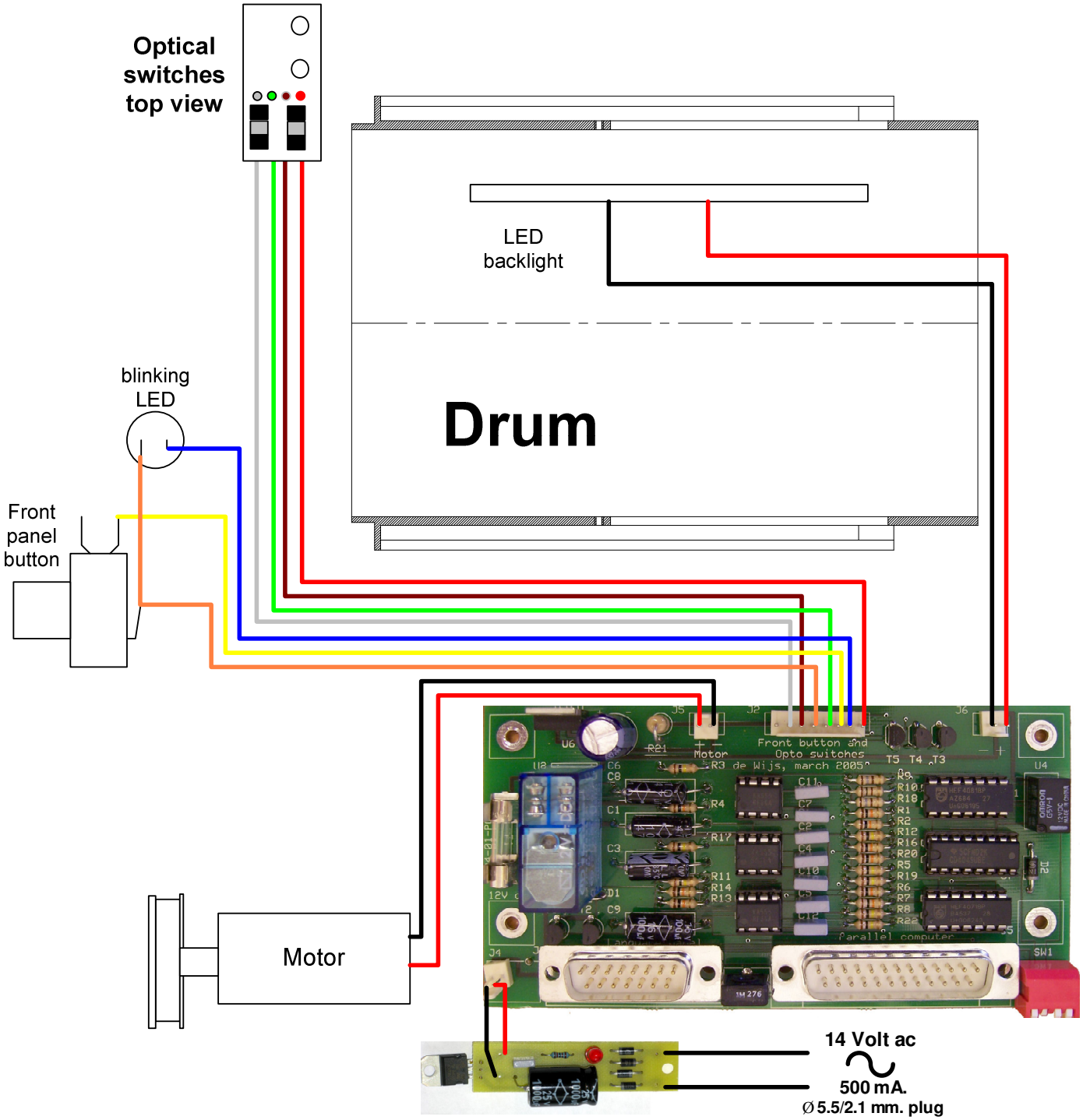
J3 vertical 8-pin header: (for language selection box)

Connector pin	Description computer side and addressing		Description rotary viewer side	Direction looking from computer side.
1	Busy	Base+1 bit 7	Loop through to D25 con.	Input
2			Ground	
3			+12 Volt.	
4			+5 Volt.	
5	D5	Base+0 bit 5	Loop through to D25 con.	Output
6	D6	Base+0 bit 6	Loop through to D25 con.	Output
7	D7	Base+0 bit 7	Loop through to D25 con.	Output
8	Error	Base+1 bit 3	Loop through to D25 con.	Input
9	D4	Base+0 bit 4	Loop through to D25 con.	Output
10				
11				
12				
13				
14				
15				

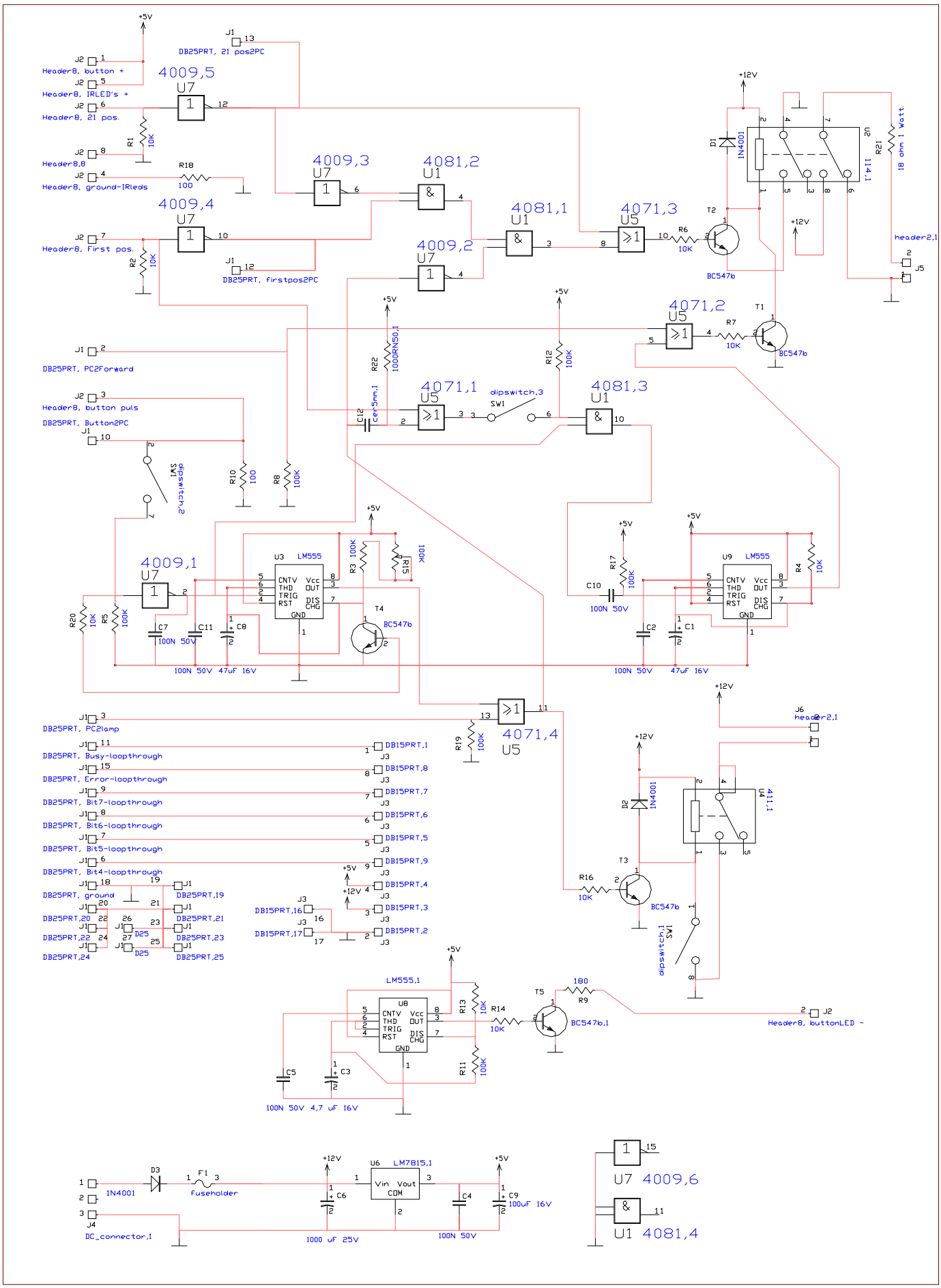
6.4 Electronic component list model 06-02-A-M

R1	10K 1/4 Watt IR detect
R2	10K 1/4 Watt IR detect
R3	100K 1/4 Watt
R4	10K 1/4 Watt
R5	100K 1/4 Watt
R6	10K 1/4 Watt
R7	10K 1/4 Watt
R8	100K 1/4 Watt
R9	180 1/4 Watt
R10	100 1/4 Watt
R11	100K 1/4 Watt
R12	100K 1/4 Watt
R13	10K 1/4 Watt
R14	10K 1/4 Watt
R15	1M 0.15 Watt 10 mm. standing Pot.
R16	10K 1/4 Watt
R17	100K 1/4 Watt
R18	180 1/4 Watt
R19	100K 1/4 Watt
R20	10K 1/4 Watt
R21	22 1 Watt
C1	47uF 10 Volt axial
C2	100n 50 Volt polyester
C3	4,7uF 50 Volt Elco rad.
C4	100n 50 Volt polyester
C5	100n 50 Volt polyester
C6	1000uF 16 Volt Elco rad.
C7	100n 50 Volt polyester
C8	47uF 10 Volt axial
C9	100uF 16 Volt Elco ax.
C10	100n 50 Volt polyester
C11	100n 50 Volt polyester
C12	100n 50 Volt polyester
D1	1N4001
D2	1N4001
D3	1N4001
T1	BC547b
T2	BC547b
T3	BC547b
T4	BC547b
T5	BC547b
U1	4081 Quad And
U2	Relais 2x 12V OMRON G2R-2
U3	LM555 timer IC
U4	Relais 1x 12V OMRON G5V-1
U5	4071 Quad Or
U6	LM7805 1A
U7	4049 Hex inv. Buff.
U8	LM555 timer IC
U9	LM555 timer IC
J1	D25 PCB socket 90º male
J2	Header 8 pins
	Header Socket 8 pins
J3	D15 PCB socket 90º male
J5	Header 2 pins
J6	Header 2 pins
	Header Socket 2 pins
	Shrink contacts for Headers
SW1	Dip switch 4x 90º
3	DIL8 sockets
2	DIL14 sockets
1	DIL16 sockets
F1	Fuse holder internal metal clamps
1	Opto switches 5mm. Gap with PCB
1	04-01-PCB; circuit board

6.5 Internal electrical connection diagram.



6.6 Electronic schematics



6.7 PCB layout